MODULE IV
TANK SYSTEMS

IV.A. APPLICABILITY

. The requirements of this Module pertain to the storage and treatment of hazardous waste in the tank systems identified in IV.B.1., and the sumps listed in Attachment 13, Table 13-2. The Permittee shall comply with R315-8-10 and the conditions of this permit for all tank systems.

IV.B. WASTE IDENTIFICATION AND TANK USAGE

IV.B.1. The Permittee may only store up to the listed maximum capacity, and treat if applicable, the hazardous waste materials shown for the following tank systems:

Hazardous Waste Storage And Treatment Tank Systems

Tank Number	Max. Permitted Storage Capacity Gallons	Max. Permitted Storage Level Inches	Nominal Tank Dimensions	Allowable Waste Codes	Permitted Management Activity
SEG-T1 SEG-T2	250	90	2'-6" diameter 7'-10" high	P999	Storage of agent drained from rockets and mines
MDF-T3 MDF-T4	250	90	2'-6" diameter 7'-10" high	P999	Storage of agent drained from projectiles and bulk items
LIC-T5 ASR-T6	250	90	2'-6" diameter 7'-10" high	P999	Storage of agent, LIC feed tanks
ASR-T7	450	50	4'-6" diameter 5'-8" high	P999	Storage of agent, LIC feed tanks
T13-A T13-B T13-C	4,500	120	9'-0" diameter 9'-0" high	F999, D002, D004, D005, D006, D007, D008, D009, D010, D011	Storage and treatment of spent PAS brines
T13-D T13-E	13,500	175	13'-0" diameter 14'-0" high	F999, D002, D004, D005, D006, D007, D008, D009, D010, D011	Storage and treatment of spent PAS brines or Spent Decon Solution (SDS).
TMF-1 TMF-2	1,440	79	7'-8" diameter 7'-8" high	F003, F005, F999, D001 D002, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D022	Storage and treatment of spent decontamination solutions, miscellaneous waste liquids from spills, and liquid laboratory wastes

IV.B.2. The sumps listed in Permit Attachment 13, Table 13-2, used to collect decontamination solutions, agent and miscellaneous liquid spills are also regulated by this Module. These sumps may be used to treat agent and agent contaminated hazardous wastes spills with decontamination solution before they are pumped to one of the permitted spent decontamination tank systems. Only wastes with the codes F999, D002, and P999 are allowed in these sumps. The maximum capacity of these sump systems as shown in Table 13-2 shall not be exceeded. Wastes shall not remain in these sumps for more than 24 hours.

IV.B.3. Off-site generated hazardous waste materials shall not be placed in any of the permitted tank or sump systems.

IV.B.4. With the exception of spent decontamination brine solutions and their salt residues, only approved tanks, as listed in IV.B.1, shall store laboratory wastes.

IV.C. GENERAL OPERATING REQUIREMENTS

IV.C.1. The Permittee shall not place hazardous wastes, treatment reagents, or other incompatible materials in a tank system if they could cause the tank, its ancillary equipment, or the secondary containment sump to rupture, leak, corrode, or otherwise fail.

IV.C.2. The Permittee shall not place hazardous wastes in a tank or sump system unless that system has been completely decontaminated and cleaned if it held a different chemical agent or stored an incompatible material.

IV.C.3. Diesel fuel and fuel oil may be stored in the Tanks LIC-T5, ASR-T6 and ASR-T7 only for the purpose of decontaminating a tank system for maintenance or to clean a tank system between different agent campaigns. Diesel fuel and fuel oil with a flash point less than 140° F shall not remain in any of the tank systems for more than 72 hours. After use, these contaminated fuels must be burned in the primary combustion chamber of the Liquid Incinerator.

IV.C.4. The design and operating descriptions of the permitted tank systems are provided in Attachment 13. Operation of the permitted tank and sump systems shall comply with the procedures in Attachment 13.

IV.C.5. Waste shall not be added to any of the tanks described in Condition IV.B.1. unless all level control instrumentation identified in Attachment 13 are operational in accordance with the manufacturer's specifications and the level devices are fully calibrated for the liquid density of the stored waste. Liquid levels in the tank systems shall not exceed the level height shown in Condition IV.B.1.

IV.C.6. If treatment is conducted in a tank system, sufficient freeboard shall remain so the permitted tank capacity shall not be exceeded when decontamination solutions are added.

IV.C.7. All tanks used to store or treat a hazardous waste at CAMDS shall be equipped with a level control device that prevents the tank system from exceeding the permitted capacity.

IV.C.8. The Permittee may only transfer liquids accumulated in the secondary containment sumps in the PAS areas to the five T13 brine storage tanks, provided that prior to transfer, the Permittee has analyzed the liquids in accordance with the waste analysis plan in Attachment 2. All other sumps shall be pumped to either TMF-1 or TMF-2 in the Toxic Maintenance Area.

IV.D. SPECIFIC OPERATING CONDITIONS - AGENT STORAGE TANKS

IV.D.1. The only chemical agents that can be placed in the Agent Collection System Tanks SEG-T1, SEG-T2, MDF-T3 and MDF-T4 are GB, VX and Mustard (H/ HD/HT) and their natural occurring break-down products. In addition, decontamination or cleaning solutions used to decontaminate the system after agent campaigns and prior to maintenance activities may be placed in these tanks.

IV.D.2. The only materials allowed in tanks LIC-T5, ASR-T6 and ASR-T7 are liquid hazardous waste chemical agents, miscellaneous agent contaminated liquid wastes that will be treated in the LIC primary combustion chambers, and decontamination or cleaning solutions used to decontaminate the system after agent campaigns and prior to maintenance activities.

IV.D.3. The miscellaneous agent contaminated wastes that may be accumulated in the agent collection and tanks systems are identified in Attachment 2, Waste Analysis Plan.

IV.E. SPECIFIC OPERATING CONDITIONS - SPENT DECONTAMINATION STORAGE TANKS

IV.E.1. The only materials that shall be placed in Spent Decontamination Storage Tanks, TMF-1 and TMF-2, are spent sodium hydroxide and sodium hypochlorite decontamination solutions, the miscellaneous liquid wastes identified in Permit Attachment 2, and cleaning solutions used to decontaminate the system after agent campaigns and prior to maintenance activities.

IV.E.2. The only treatment allowed in the Spent Decontamination Storage Tanks shall be the addition of approved decontamination solutions when the chemical agents GB and VX are detected above 20 parts per billion (ppb), and the Mustard compounds H/HD/HT are detected above 200 ppb.

IV.E.3. The permittee shall manage waste accumulated in Tanks TMF-1 and TMF-2 as an operating batch. A batch of waste shall be the volume of liquid accumulated in the tank when filling of the tank has been stopped and the Permittee has determined that no additional waste will be added to the tank before it is to be emptied. Prior to emptying the tank, the Permittee shall sample and analyze each batch of waste for agent, pH, and total organic compounds in accordance with the Waste Analysis Plan (Attachment 2).

IV.E.4. Each batch of liquid waste accumulated in the Tanks TMF-1 and TMF-2 that is derived from the decontamination of chemical agent shall be incinerated in the secondary chambers of the Liquid Incinerator. Only liquid wastes having an agent concentration at or below 20 part per billion (ppb) for GB, 20 ppb for VX, and 200 ppb for H/HT/HD shall be incinerated in the secondary chamber of the Liquid Incinerator. Spent Decontamination Solutions (SDS) may also be shipped to an off-site TSDF in accordance with Attachment 2 (Waste Analysis Plan).

IV.F. SPECIFIC OPERATING CONDITIONS - BRINE STORAGE TANKS

IV.F.1. The only materials that shall be placed in Brine Storage Tanks, T13-A, T13-B, T13-C, T13-D and T13-E, are spent scrubber brines from the incinerator pollution abatement systems (PAS), decontaminating solutions, liquids collected in the BDA secondary containment system, solutions used to clean the BDA evaporator and piping system, and decontamination or cleaning solutions used to decontaminate the system after agent campaigns and prior to maintenance activities. Spent decontamination solution (SDS) may be stored in tanks T13-D and T13-E. These tanks must be rinsed with process water as per the description in Attachment 13, section 13.1.2 before and after storage of SDS.

IV.F.2. The cleaning solutions referenced in Condition IV.F.1. shall be of a nominal (3% by weight) hydrochloric acid solution or a citric acid solution. These solutions shall only be added to a BDA tank when there is a minimum of 5,000 gallons of brine in the tank.

IV.F.3. No ignitable or reactive waste may be stored in the Brine Storage Tanks.

IV.F.4. The only treatment allowed in the Brine Storage Tanks shall be the addition of approved decontamination solutions when the chemical agents GB and VX are detected above 20 parts per billion (ppb), and the Mustard compounds H/HD/HT are detected above 200 ppb.

IV.F.5. Contaminated liquids shall not be pumped from the Brine Storage Tanks until concentration levels are at or below 20 parts per billion (ppb) for agents GB and VX, and 200 ppb for Mustard, H/HD/HT.

IV.F.6. The permittee shall manage waste accumulated in the BDA tanks in batches. A batch of waste shall be the volume of liquid accumulated in the tank when filling of the tank has been stopped and the Permittee has determined that no additional waste will be added to the tank before it is to be emptied. At such time, the Permittee shall sample and analyze the waste contained in that tank in accordance with the Waste Analysis Plan in Attachment 2.

IV.F.7. Waste in the Brine Storage Tank System shall be processed either through the Brine Drying Area or transferred off-site to an approved facility for treatment and disposal.

IV.G. SUMPS DESIGNATED AS 24-HOUR INTERMITTENT COLLECTION UNITS (ICUs)

IV.G.1. Hazardous wastes may be stored in the sumps identified in Table 13-2 in Attachment 13 for a period not to exceed 24 hours. Sumps shall be pumped at least once every 24 hour period if liquids are detected.

IV.H. INSPECTION SCHEDULES AND PROCEDURES

IV.H.1. The Permittee shall inspect the tank and sump systems in accordance with the inspection schedule provided in Attachment 5.

IV.H.2. The Permittee shall inspect the following components of the permitted tank systems when waste is present in the tank, at a minimum, of once every 24 hours:

a. Above ground portions of the tank system, including the bottom of the tank(s), to detect corrosion or releases of waste;

b. The area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect erosion or signs of releases of hazardous waste;

c. Operating Record notes concerning the level control equipment to ensure that the tank systems are being operated according to their design and operating procedures.

IV.H.3. The Permittee shall inspect the following components of the sump systems, at the time intervals specified below:

a. The level probe PDARs readings should be reviewed once every 24 hours to verify that the correct signals are being transmitted from the sump systems;

b. A visual inspection of every sump system shall be conducted at least once per week whenever hazardous waste materials are present in the building;

c. Inspections, level control re-calibrations and equipment function testing during each agent campaign change-over shall be completed prior to the introduction of the different chemical agent into the tank systems.

IV.H.4. If any tank systems have been out of service for 360 or more days, they shall be recertified by a qualified, independent professional engineer that the tank system is capable of storing liquid hazardous waste for the intended life of the system. The Permittee shall have this certification performed before the tank is put back into service. The certification report shall then be submitted to the Executive Secretary within 15 days of returning the tank system to service.

IV.I. RESPONSE TO LEAKS OR SPILLS

IV.I.1. In the event of a leak or a spill from a tank system, from a secondary containment sump system, or if a system becomes unfit for continued use, the Permittee shall remove the system from service immediately and initiate the following activities:

a. Stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release;

b. Contain any visible release to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water;

c. Remove waste and accumulated precipitation from the system within 24 hours of the detection of the leak to prevent further release and allow inspection and repair of the system. If the Permittee finds that it will be impossible to remove the waste within this time period, the Permittee shall notify the Executive Secretary within 24 hours of that determination;

d. For a release caused by a spill that has not permanently damaged the integrity of the system, the Permittee shall remove the released waste and make the necessary repairs to fully restore the tank or sump system before it is put back into service.

IV.I.2. If the Permittee replaces a component of the tank system to eliminate a leak, that component must satisfy the requirements for new tank systems or components in R315-8-10 (40 CFR Sections 264.192 and 264.193 incorporated by reference).

IV.I.3. After all major tank or sump system repairs, the Permittee shall obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault.

IV.J. CALIBRATION REQUIREMENTS

IV.J.1. The Permittee shall maintain, calibrate, and operate all process monitoring, control and recording equipment, as specified in Attachment 13, whenever hazardous waste materials are present in a permitted tank system.

IV.K. RECORD KEEPING AND REPORTING

IV.K.1. The Permittee shall verbally report to the Executive Secretary within 24 hours of detection, when a reportable quantity leak or spill occurs from a tank system or secondary containment system.

IV.K.2. Releases from a tank system that are contained within a secondary containment system need not be reported unless they occur from an unexplained source. All pertinent information about a release shall be recorded in the facility Operating Record.

IV.K.3. Within 30 calendar days of detecting a release to the environment from a tank system or a secondary containment system, except for P999 and F999 wastes which require a written report in five (5) days as specified by Permit Conditions in Section I.T., the Permittee shall report the following information to the Executive Secretary:

a. Likely route of migration of the release;

b. Characteristics of the surrounding soil (including soil composition, geology, hydro geology, and climate) including proximity of down gradient drinking water, surface water, and populated areas;

c. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet the written report time period, the Permittee shall provide the Executive Secretary with a schedule of when the results will be available. This schedule must be provided in writing before the required submittal period expires;

d. Description of response actions taken or planned to minimize the spill impact on the environment;

e. Describe the repairs, design changes or operating procedures to the tank system to minimize the potential for additional spills or leaks.

IV.K.4. The Permittee shall keep on file at the facility, the written statements by those persons that certify the design, installation and integrity of the tank systems until such time that those tank systems are certified closed.

IV.K.5. In the event that a tank exceeds the maximum allowable capacity designated for that system, the Permittee shall document the following information in the facility Operating Record and notify the Executive Secretary in writing within seven (7) days of discovery:

a. The date and time of occurrence;

b. Identify the tank system and the contents at the time of the occurrence;

c. Indicate if any other available tank storage volume within the system was available and if no additional storage capacity was available within the storage system, indicate if the associated collection and treatment activities were automatically stopped;

d. Describe if the tank system automatically switched from the High-High level tank to a tank with the available storage capacity and the tank intake valves were automatically closed;

e. Indicate if any associated incinerator automatic waste feed cutoff interlocks were activated. Identify the required interlock and whether the interlocks successfully operated as designed; and

f. Describe the operating control procedures that allowed the tank system to exceed the maximum allowable storage capacity (e.g., why the operator was not successful in managing the waste within the high-high level volume working capacity).

IV.K.6. The Permittee shall document and record the results of each Spent Decontamination Holding Tank System waste analysis and any subsequent treatment.

IV.K.7. The Permittee shall document and record the results of each Brine Reduction Area Storage Tank System waste analysis and any subsequent treatment.

IV.L. TANK SYSTEM DESIGN MODIFICATIONS AND CONSTRUCTION

IV.L.1 The Permittee shall not alter any tank or sump system design identified in this permit unless the provisions of R315-3-15 and R315-3-17 are followed.

IV.L.2. Proposed modifications to the tank and sumps systems shall be shown on a design drawing and shall include a written assessment by an independent registered professional engineer that attests to the structural integrity and the suitability for handling the specified hazardous waste in accordance with R315-8-10, which incorporates 40 CFR 264.192 by reference.

IV.M. CLOSURE

IV.M.1. The Permittee shall close the Tank Systems in accordance with the Closure Plan, included as Attachment 10.